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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/752,227	12/29/2000	Joseph E. Johnson	97078CIPDIV1	5132

7590 07/06/2004

Cabot Corporation
Law Department
157 Concord Road
Billerica, MA 01821

EXAMINER

SHOSHO, CALLIE E

ART UNIT	PAPER NUMBER
1714	

DATE MAILED: 07/06/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/752,227

Applicant(s)

JOHNSON ET AL.

Examiner

Callie E. Shosho

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 31 March 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 57-67, 70-72, 80, 82 and 84-86 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 65-67 is/are allowed.
- 6) ☒ Claim(s) 57-60, 62-64, 70-72 and 86 is/are rejected.
- 7) ☒ Claim(s) 61, 80, 82, 84 and 85 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Continued Examination Under 37 CFR 1.114

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 3/31/04 has been entered.
2. All outstanding rejections are overcome in light of applicants' amendment filed 3/31/04.

Claim Objections

3. Claims 80 and 84-85 are objected to because of the following informalities: There is a period after "pigment" in line 12 of claim 80. However, as required under MPEP 608.01(m), except for abbreviations, periods may not be used elsewhere in a claim except at the end of the claim. It is advised that the period in line 12 is deleted.
4. Claim 82 is objected to under 37 CFR 1.75(c), as being of improper dependent form for failing to further limit the subject matter of a previous claim. Applicant is required to cancel the claim(s), or amend the claim(s) to place the claim(s) in proper dependent form, or rewrite the claim(s) in independent form.

Claim 82, which depends on claim 80, recites that the additional polymer is a styrenated acrylate while claim 80 recites that the additional polymer includes styrene-acrylic acid copolymer, styrene-acrylic acid-alkyl acrylate, styrene-maleic acid-alkyl acrylate, styrene-methacrylic acid copolymer, and styrene-methacrylic acid-alkyl acrylate. Thus, claim 82 fails to further the subject matter of the claim on which it depends given that claim 82 is broader than claim 80. The scope of claim 82 is broader than that of claim 80 given that the recitation of “styrenated acrylate” in claim 82 encompasses polymers in addition to those recited in claim 80 such as styrene-alkyl (meth)acrylate copolymer.

Claim Rejections - 35 USC § 112

5. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

6. Claims 62-64 and 70-72 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 62, which depends on claim 57, recites modified pigment “further comprising a second chemical group attached to said pigment”. The scope of the claim is confusing given that there is no disclosure in claim 57 of “first chemical group” or even “chemical group”. Given that there is no reference to a first or previous chemical group, it is not clear why claim 62 refers to “second” chemical group. Clarification is requested.

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Similar questions arise with respect to claim 70, which depends on claim 65, and which recites the same claim language as claim 62.

Claim Rejections - 35 USC § 102

7. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

8. Claims 57-60 are rejected under 35 U.S.C. 102(e) as being anticipated by Cooke et al. (U.S. 6,110,994).

Cooke et al. disclose modified pigment comprising pigment having attached group of the formula $\text{Ar-CO}_2\text{-R}$ where Ar is aromatic group and R is polymer such as polyamide or polyester. Further, it is disclosed that the polymer can include aromatic or alkyl group (col.1, lines 60-67, col.4, lines 4-9 and 19-22, and col.10, lines 57-64).

In light of the above, it is clear that Cooke et al. anticipate the present claims.

9. Claim 86 is rejected under 35 U.S.C. 102(e) as being anticipated by Whitehouse et al. (U.S. 6,337,358).

Whitehouse et al. disclose modified pigment comprising pigment having attached group of the formula $\text{A-R}^1\text{-}\overset{\text{R}^2}{\underset{\text{R}^3}{\text{C}}}\text{-X-SFR}$ where A is an aromatic or alkyl group corresponding to group X

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as presently claimed, X is a polymer, and SFR is $O-Ar^2$ where Ar is an aromatic group corresponding to presently claimed R. It is further disclosed that the above group can be terminated with hydrogen instead of SFR. The polymer includes that obtained from monomers such as alkyl (meth)acrylate which comprises alkyl group corresponding to presently claimed group X' group. There is also disclosed an ink jet ink which comprises liquid vehicle and the above modified pigment (col.2, line 64-col.3, line 34, col.5, lines 50-51, col.6, lines 58-60, col.8, lines 11-12 and 20-24, col.11, lines 21-41, col.11, lines 53-col.12, line 21, col.12, lines 50-57, col.13, line 19, and col.15, lines 17-21).

In light of the above, it is clear that Whitehouse et al. anticipate the present claim.

Claim Rejections - 35 USC § 103

10. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

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11. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

12. Claims 62-64 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cooke et al. (U.S. 6,110,994) in view of Johnson et al. (U.S. 5,837,045).

The disclosure with respect to Cooke et al. in paragraph 8 above is incorporated here by reference.

The difference between Cooke et al. and the present claimed invention is the requirement in the claims of modified pigment comprising second chemical group.

Johnson et al., which is drawn to modified pigment, disclose pigment having attached chemical group such as carboxyphenyl or sulfophenyl in order to produce pigment that is more easily dispersible and has greater stability than untreated pigment (col.3, lines 37-43, col.7, lines 30-38, and col.11, lines 17-26).

In light of the above, it therefore would have been obvious to one of ordinary skill in the art to attach chemical group such as carboxyphenyl or sulfophenyl to modified pigment of Cooke et al. in order to produce pigment with improved dispersability and stability, and thereby arrive at the claimed invention.

Allowable Subject Matter

13. Claim 61 is objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Claim 61 would be allowable if re-written in independent form as described above given that while the "closest" prior art Cooke et al. (U.S. 6,110,994) disclose modified pigment comprising pigment having attached group of the formula $\text{Ar-CO}_2\text{-R}$ where Ar is aromatic group and R is polymer such as polyamide or polyester, there is no disclosure or suggestion that the aromatic group is further substituted with carboxylic or sulfonate group.

14. Claims 65-67 are allowable over the "closest" prior art for the following reasons.

Hall et al. (U.S. 5,552,458) disclose modified pigment having attached group. However, there is no disclosure or suggestion that the pigment has attached at least one aromatic or alkyl group X as presently claimed. Further, there is no disclosure in Hall et al. of ink as required in present claim 65.

Whitehouse et al. (U.S. 6,337,358) disclose modified pigment comprising pigment having attached group of the formula $\text{A-R}^1-\overset{\text{R}^2}{\underset{\text{R}^3}{\text{C}}}-\text{X-SFR}$ where A is an aromatic or alkyl group corresponding to group X as presently claimed, X is a polymer, and SFR is O-Ar^2 where Ar is an aromatic group corresponding to presently claimed R. There is also disclosed an ink jet ink which comprises liquid vehicle and the above modified pigment. However, the polymer X of Whitehouse et al. is obtained from diene or vinyl monomer. There is no disclosure in

Whitehouse et al. that the pigment has attached aromatic or alkyl group which is substituted with at least one group of the formula $-\text{[polymer]R}$ where the polymer presents polycarbonate group, polyether group, polyimide group, polyurethane, polyester, or polyvinyl alcohol as required in present claim 65.

Cooke et al. (U.S. 6,110,994) disclose modified pigment comprising pigment having attached group of the formula $\text{Ar-CO}_2\text{-R}$ where Ar is aromatic group and R is polymer such as polyamide or polyester. However, there is no disclosure or suggestion in Cooke et al. of ink as required in present claim 65.

15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Callie E. Shosho whose telephone number is 571-272-1123. The examiner can normally be reached on Monday-Friday (6:30-4:00) Alternate Fridays Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Vasu Jagannathan can be reached on 571-272-1119. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

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Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Callie E. Shosho
Primary Examiner
Art Unit 1714

CS
7/1/04